

HORIZON 02i

TECHNICAL SPECIFICATION

| Basic Configuration | Specification |
|------------------------------|--|
| Accuracy and Repeatability | 1.6 Cpk @ +/- 25µm # |
| Cycle Core Time | 12 seconds |
| Max. Board Size (Print Area) | 508mm (X) x 508mm (Y) |
| Print Speed | 2mm to 150mm/sec |
| Squeegee Pressure Mechanism | Software controlled, motorised |
| Tooling | Magnetic tooling pins 19mm dia x 15 4mm dia x 15 |
| Camera | Green digital camera, using IEEE 1394 interface. Multi channel. LED lighting. FOV 5mm x 8.5mm |
| Fiducial Recognition | Automatic fiducial teach and find |
| Operating System | Windows XP |
| Operator Interface | Colour TFT touch screen display, keyboard and trackball with DEK Instinctiv™ software |
| Stencil Loading | Manual with screen depth adjuster |
| Stencil Alignment | Motorised via actuators X, Y and Theta |
| Connectivity | RJ-45LAN (networking) and USB2 interface available |
| Printer Construction | One piece optimised welded frame |
| ISCAN™ Machine Control | Motion control using CAN BUS network |
| Camera Positioning | Rotary motors and encoders, with 4 micron resolution |
| Machine Interface | Upline and downline FMI included |
| Squeegee | Clamped double trailing edge squeegee (1 set included) |
| Documentation | Hard copy manuals comprising: Operator, Installation, Electrical Drawings. On board technical manuals and tutorials supporting operator functions. CD containing manuals and tutorials |

| Certification | Specification |
|-----------------------|--|
| CE | 98/37/EC 89/336/EEC 73/23/EEC Subsequent Amendments |
| ETL | UL61010A-1 1st Edition 2002 CAN/CSA-C22.2 No 1010.1-92 |
| Accoustic Noise Level | Less than 70dB 2003/1/EC |

| Services | Specification |
|-------------------------|---|
| Voltage | 100 Volts to 240 Volts +/-10% Single Phase 50/60Hz |
| Max Current @ 115V | 20 Amps with vacuum pump 6 Amps without vacuum pump |
| Max Current @ 230V | 10 Amps with vacuum pump 3 Amps without vacuum pump |
| Over Current Protection | An external circuit breaker ≤ 25 Amps is required to be fitted in line with the machine supply |
| Air | To ISO 8573.1 Standard Quality Class 2.3.3 Pressure 5 bar to 8 bar at 5 Litres/min |

DEK's machine accuracy and repeatability qualification is undertaken using production environment process variables. Print Speeds, Print Pressures, Rising Table and Camera Movements are included in the process capability figure.

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| Transport System | Specification |
|-------------------------------|--|
| Type | Single piece with 3mm round transport belts |
| Rail Justification | Front fixed rail |
| Width Adjustment | Programmable motorised rear rail |
| Min. Board Size (Handling) | 50mm (X) x 40mm (Y) |
| Max. Board Size (Handling) | 508mm (X) x 508mm (Y) |
| Transport Direction | Left to right Right to left Left to left Right to right |
| Substrate Location | Patented over the top clamps |
| Underside Component Clearance | 3mm to 42mm |
| Substrate Thickness | 0.2mm to 6mm |
| Substrate Max. Weight | 1kg |
| Substrate Warpage | Up to 8mm including substrate thickness |

| Vision | Specification |
|-------------------------|--|
| Vision System | Cognex |
| Camera Lighting | Software controlled programmable LED lighting |
| Fiducials | 2 |
| Fiducial Types | Synthetic fiducial library or unique pattern recognition |
| Fiducial Size | 0.5mm to 3mm |
| Fiducial Locations | Anywhere on substrate |
| Fiducial Error Recovery | Auto lighting adjustment Auto fiducial search |

| Operating Environment | Specification |
|-----------------------|---|
| Temperature | 10° to 35° C (50° to 95° F) |
| Humidity | 30% to 70% Relative Humidity (non condensing) |

| Process Parameters | Specification |
|--------------------|---|
| Print Pressure | 0kg to 20kg |
| Print Gap | 0mm to 6mm |
| Screen Separation | Speed: 0.1mm to 20mm/sec Distance: 0mm to 3mm |
| Print Modes | ProFlow™ Print/Print Print/Flood Flood/Print Adhesive |
| Paste Knead | Programmable: number, period, on demand |

| Shipping Information | Specification |
|----------------------|--|
| Approx. Weight | 820kg boxed 677kg unboxed |
| Approx. Dimensions | 2060mm x 1500mm x 1570mm (81.1" x 59" x 61.8") |

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| Available Options | Specification |
|-------------------------------|--|
| Camera | Gold Camera Hawkeye 400 Hawkeye 1200 |
| Inspection | Basic stencil and board Advanced stencil and board |
| Max Board Size (Print Area) | 610mm (X)*x 508mm (Y) |
| Print Method | Paste dispenser Paste roll height monitor ProFlow™ ProFlow low volume head |
| Substrate Transport | Single piece conveyor with flat belts (heavy boards) Snuggers (edge clamping) Foil-less clamps Board clamp regulator Remote board stop (for use with heavy board option) |
| Substrate Support | Vacuum tooling capability Vacuum Cups Grid Lok tooling |
| Substrate Handling | Flexible boards Selective print pass through Singulation Soft rail lift/land Virtual Panel Tooling (VPT) |
| Tooling Deviation Monitor | Verification of tooling set up via squeegee pressure feedback |
| Software & Communications | Off Line Editor (OLE) GEM on TCP/IP Remote event monitoring |
| Product Data Capture | Remote bar code reader Hand held bar code reader |
| Printing Environment Control | Static - Air Ioniser Temperature - Temperature Control Module (TCM) Air Particulate - In-line Filtration Module for use with TCM |
| Screen Frame | Vector Guard Universal screen frame adaptor |
| Adjustable Screen Mount (ASM) | Screen Frame Variants - Fully adjustable to accommodate screens in the range of 305mm to 736mm (12" ** to 29") by 38mm height Image Position - centre, front, custom |
| Statistical Process Control | On board, reported via operator interface (QC-CALC) |
| Under Screen Cleaning | Paper cleaner, fully programmable with wet/dry/vacuum wipe with external solvent tank Vortex with external solvent tank |
| Vacuum Assist for USC | On board vacuum unit 25 litres/sec airflow |
| Speed Up | 2 second cycle time upgrade |
| Time To Go (TTG) Capability | Consumable warnings via level gauges for paper, solvent, paste |
| Squeegee Pressure Mechanism | Closed loop feedback |
| Small Fiducials | 3 |
| Fiducials | 0.1mm fiducial capture |
| Temperature / Humidity Sensor | Monitoring of the process environment |

* For Paste Dispenser - Max of 508mm. For Paper USC - Max of 508mm. Vortex USC available to 610mm

** Min. screen width limited to 381mm (15") with 300mm USC and 250mm board clamps

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Machine Footprint

